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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

LIU 13-38

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on August 26, 2008

Signature /Elizabeth Schumacher/Typed or printed name Elizabeth Schumacher

Application Number

10/814,682

Filed

March 31, 2004

First Named Inventor

Wen Lin, et al.

Art Unit

2823

Examiner

Julio J. Maldonado

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).


Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest.  
 See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
 (Form PTO/SB/96)

☒ attorney or agent of record. 44995  
 Registration number \_\_\_\_\_

☐ attorney or agent acting under 37 CFR 1.34.  
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 Signature  
Greg H. Parker  
 /Typed or printed name  
 972-480-8800  
 Telephone number  
 August 26, 2008  
 Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Wen Lin, *et al.*  
Serial No.: 10/814,682  
Filed: March 31, 2004  
Title: SEMICONDUCTOR DEVICE HAVING A DOPED LATTICE  
MATCHING LAYER AND A METHOD OF MANUFACTURE  
THEREFOR  
Grp./A.U.: 2823  
Examiner: Julio J. Maldonado Confirmation No.: 8308

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Sir:

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

The Applicants have carefully considered this application in connection with the Examiner's Final Rejection mailed May 2, 2008, and respectfully request a pre-appeal brief review of this application in view of the following remarks.

## **REMARKS/ARGUMENTS**

The Applicants originally submitted Claims 1-40 in the application. The Applicants previously canceled claims 1-40 and added claims 41-53. Presently, the Applicants have not amended, canceled or added any claims. Accordingly, Claims 41-53 are currently pending in the application.

### **I. Comment on Advisory Action**

The Applicants suggest that the Examiner is still misapplying the teachings or suggestions of Liaw. For example, the Examiner clearly recognizes that while FIG. 1 of Liaw illustrates that its source/drain regions extend to the buried region, FIG. 4 of Liaw illustrates that its source/drain regions do not extend to the buried region. (See, page 2 of the Advisory Action dated August 7, 2008). The Examiner further recognizes that only FIG. 1 of Liaw describes a co-doped germanium buried layer, while FIG. 4 of Liaw describes a Silicon Carbide buried layer. Accordingly, neither the teachings of FIG. 1 or FIG. 4 of Liaw teach source/drain regions located within a doped epitaxial layer proximate a gate structure, wherein the source/drain regions do not extend into a co-doped germanium buried layer located thereunder, as is presently claimed. Moreover, the Examiner fails to set forth any teaching or suggestion within Liaw as to where the co-doped germanium buried layer of FIG. 1 could or should be used within the structure of FIG. 4.

### **II. Rejection of Claims 41-52 under 35 U.S.C. §103**

The Examiner has rejected Claims 41-52 under 35 U.S.C. §103(a) as being unpatentable over Bevk in view of Liaw. Independent Claim 41 currently includes the element of source/drain regions located within a doped epitaxial layer proximate a gate structure, wherein the source/drain regions do not extend into a co-doped germanium buried layer located thereunder. The Examiner correctly identifies on page 3 of the Examiner's Action dated December 18, 2007, as well as page 2 of the Examiner's Action dated May 2, 2008, that Bevk fails to teach or suggest the element that the source/drain regions do not extend into said co-doped germanium buried layer.

However, the Examiner asserts that Liaw teaches or suggests such an element. More specifically, the Examiner points the Applicants to FIG. 4 of Liaw, and the associated text at column 6, lines 17-39 therein. The Applicants respectfully disagree with the Examiner that FIG. 4, and the associated text, teaches or suggests the claimed element of source/drain regions located within a doped epitaxial layer proximate a gate structure, wherein the source/drain regions do not extend into a co-doped germanium buried layer located thereunder, as is presently claimed. For instance, all the text associated with FIG. 4 is directed to a SiC buried layer. Nothing in that text teaches or suggests that the SiC buried layer could be a co-doped germanium buried layer, as is presently claimed. The Examiner is correct that FIG. 1 teaches a co-doped germanium buried layer, however, the teachings and suggestions of FIG. 1 require that the source/drain regions thereof extend into the co-doped germanium buried layer, which is in direct contrast to that which is presently claimed. Moreover, nothing else exists with regard to FIG. 1 that might suggest that the source/drain regions thereof do not need to extend into the co-doped germanium buried layer thereof. Accordingly, Liaw also fails to teach or suggest this claimed element.

The Examiner goes on further to argue that Column 5, lines 36 thru 51 of Liaw suggests that the substrate discussed with respect to FIG. 4 may comprise a co-doped germanium buried layer. The Applicants again disagree with the Examiner on this supposed teaching or suggestion of Liaw. As the Examiner has clearly pointed out, Liaw suggests that its substrate discussed with regard to FIG. 3 may comprise other heteroepitaxial films. However, Liaw does not suggest that those other heteroepitaxial films are a co-doped germanium buried layer. A teaching or suggestion that a film may comprise other materials is far from a teaching or suggestion that the film may comprise a co-doped germanium buried layer. Moreover, the Applicants believe this statement of Liaw is being made with regard to FIG 3, not its FIG. 4.

The Examiner goes even further to argue that the claimed limitation that the source/drain regions thereof do not need to extend into the co-doped germanium buried layer are just dimensional limitations that would be easily achieved through experimentation. The Applicants strongly suggest that the location of a

feature is not a dimensional limitation, as that element is defined in the cases cited by the Examiner. Accordingly, this argument of the Examiner is without merit.

Therefore, Bevk, individually or in combination with Liaw, fails to teach or suggest the invention recited in independent Claim 41 and its dependent claims, when considered as a whole. Thus, the combination of Bevk and Liaw must fail to establish a prima facie case of obviousness with respect to these claims. Claims 41-52 are therefore not obvious in view of Bevk and Liaw.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 41-52 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Reviewers withdraw the rejection of Claims 41-52.

### **III. Rejection of Claim 53 under 35 U.S.C. §103**

The Examiner has rejected Claim 53 under 35 U.S.C. §103(a) as being unpatentable over Bevk in view of Liaw, and in further view of U.S. Patent No. 7,067,856 to Ramadani et al. ("Ram"). As indicated above, independent Claim 41 currently includes the element of source/drain regions located within a doped epitaxial layer proximate a gate structure, wherein the source/drain regions do not extend into a co-doped germanium buried layer located thereunder. As established above, each of Bevk and Liaw fails to teach or suggest this claimed element. Ram fails to correct their deficiencies.

The Examiner is offering Ram for the sole proposition that interconnects may be located within interlevel dielectric layers positioned over the transistors, thereby connecting the transistors to form an operational integrated circuit. Notwithstanding the accuracy of the Examiner's proposition, a teaching or suggestion that interconnects may be located within interlevel dielectric layers positioned over the transistors, thereby connecting the transistors to form an operational integrated circuit, is very different from a teaching or suggestion of source/drain regions located within a doped epitaxial layer proximate a gate structure, wherein the source/drain regions do not extend into a co-doped germanium buried layer located thereunder, as is presently claimed. Accordingly, Ram also fails to teach or suggest this claimed element.

Therefore, Bevk, individually or in combination with Liaw and/or Ram, fails to teach or suggest the invention recited in independent Claim 41 and its dependent claims, when considered as a whole. Thus, the combination of Bevk, Liaw and Ram must fail to establish a prima facie case of obviousness with respect to these claims. Claim 53 is therefore not obvious in view of Bevk, Liaw and Ram.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claim 53 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Reviewers withdraw the rejection of Claim 53.

#### **IV. Conclusion**

In view of the foregoing remarks, the Applicants see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicits a Notice of Allowance for Claims 41-53.

The Applicants request the Reviewers to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

HITT GAINES, P.C.



Greg H. Parker  
Registration No. 44,995

Dated: August 26, 2008

P.O. Box 832570  
Richardson, Texas 75083  
(972) 480-8800